THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 589 OCTOBER 21, 1899. Vol. XII.

Meat Inspection.

Last week we endeavoured to earn Mr. Woods' gratitude by answering some questions he put concerning the Sanitary Institute's proposed examination. Mr. Woods writes this week to say he is not satisfied with our answers but only mentions the fact in deference to the opinions of his friends.

Our correspondent there offers to "state the issue quite plainly," but only succeeds in confusing it. What we contended was that a meat inspector should know what the tuberculin test is. Probably all of them do know it. An inspector who did not know what the test was would make a dreadful exhibition in conversation with any intelligent farmer or butcher. We tried to express our disapproval of all kinds of amateurs playing with the tuberculin test.

Mr. Woods offers us some opinions of his own which he apparently imagines are opposed to the plain issues we stated. His first postulate is—"That the Sanitary Inspector is not the right person to instruct the farmer on veterinary matters." If Mr. Woods utters this truism with the idea that anybody ever stated the contrary he is mistaken. The next two contentions of Mr. Woods may safely be left without comment. The fourth contention presupposes an act we have no knowledge of. We did not know that it was the intention of the veterinary profession to "ask Government to grant us exclusive privileges with regard to tuberculin." Possibly there are veterinary surgeons who would form a deputation for that or any other purpose. We should be sorry to be one of them. When this modest request is made Mr. Woods thinks—"our position will be much weakened if another body can claim that they also should be included in these privileges on the ground that the subject is specifically included in their diploma." Using the word diploma as descriptive of a meat inspector's certificate is a *suggestio falsi* which any man who really wished a plain issue would not be guilty of. We are sorry Mr. Woods was misled into writing this letter—for his sake. We are pleased his friends prevailed, because if this is all that can be said against the Sanitary Institute's examination the veterinary practitioner may still "sleep o' nights."

Rabies and Hydrophobia.

Popular education is a slow process, and one which is not always assisted by the press. Every now and again letters appear stating that the earth is flat, and not an oblate spheroid, as astronomers and geographers teach. Others, again, aver that men never die from hydrophobia--in fact that the disease is non existent. Such a letter recently appeared in *The Times*, over the signature of "Custos," and was replied to by Dr. R. H. Clarke, from whose letter we quote the following extracts. A few such plain statements, if well spread by the lay press, should surely help to dispel some of the lamentable ignorance on this subject.

"Sir,—I should like if you will permit me to draw attention to the following passage in the extraordinary letter of 'Custos.'

'In this and in my previous letter I have spoken to facts—I used the word advisedly—regarding the police forces of London and Glasgow, numbering in the aggregate some 17,000 men. In London, for the last fifteen years—I believe, though unable to speak with confidence, for very much longer—and in Glasgow for more than 30, the officers of the three forces have elected when bitten to be bitten by sane dogs, or, if bitten by mad dogs, have not died, or there have been no mad dogs to bite them. Curious, certainly, if not conclusive.'

When I was house surgeon at the Western Infirmary, Glasgow, in 1876, I attended a policeman who was bitten while on duty by a rabid dog and died in the infirmary about six weeks later from hydrophobia. A very careful and thorough autopsy was made by the pathologist fo the infirmary, Dr. Joseph Coats who read a paper on the case and sent an account of it to the medical papers. It was published in *The Lancet* in the latter part of 1876—I think in November.

If "Custos" had ever seen a man die of hydrophobia he might begin to understand the statement he sneers at. "Better that every dog perish than that one human being fall a victim to the disease." There are many forms of death but none more awful than that from hydrophobia, and men may well regard it with horror.

We know that muzzling has never failed to stamp out rabies when systematically applied.

The local spasmodic application of the muzzling order is unsatisfactory, and it would have been infinitely better to apply it once for all to the whole country for a year; for this defect we have to thank the anti-muzzlers, who can neither recognise a fact, nor quote it, nor reason about it correctly."

CASES AND ARTICLES.

THE USE OF FORMALIN IN ANTHRAX.

Some months ago I wrote you that we had been successful in curing two or three cases of anthrax by injecting a sol. of formalin into the swelling, and the administration of ol. cinnamon internally.

Since then we have experimented altogether upon 28 head (cows, steers, heifers and calves) and are pleased to say that 22 recovered. Of the six that died we had no hopes of four. and the remaining two, I think, died of having two much formalin. We have been waiting for further outbreaks, but in vain.

We found a ♏ xx sol. formalin (1 in 1000) injected into the anthracoid swelling in the region of the jaw had the most satisfactory effect. In from 12 to 36 hours the swelling had practically disappeared. The injection was used morning and evening for three days, and then once daily for three days. A draught of ol. cinnamon ʒj., aqua. ad. Oj. was also administered daily for three days.

Our experiments were very crude, as is only natural when you consider we had to work out in the savannahs or pastures, with the thermometer registering 98°, and with cattle fairly wild. The majority had to be lassoed to be secured. The temperature was seldom taken (four times all told I think) and that with a loss of over one dozen "clinicals" at 10s. each out here. The blood of some eight or nine was examined and the bacillus anthrax recognised. Injection needles *ad lib.* were broken, and in two cases the broken off part remained in the swelling. These two are still alive and hearty.

Antiseptic precautions were carried out as well as possible. The blood upon examination showed no bacillus after the second injection.

Other experiments will be tried when the opportunity offers, as the doses and injections might be altered. We started with a solution of formalin 1 in 20,000, and got up to 1 in 1000, and increased the dose of ol. cinnamon from ♏iij to ʒj.

Much depends on getting at your patient as soon as it becomes affected. Of course the injections and doses varied with the age and size of the animals attacked. Cows, steers, heifers two years old and up got full doses; calves three months and upwards got in the proportion of one-eighth, ¼, and ½.

J. Henry Bell.

Georgetown, Demerara, Brit. Guiana.

SUPERNUMERARY SPLEEN IN A FOAL.

By James Chalmers, Class "D" Royal Veterinary College, London.

Whilst acting as locum for Mr. F. D. Bray, of Marden, I was called to attend a five months old Shire-bred filly, (the dam being "Linton Rejected," and the sire "Trustee") the property of Mr. F. S. W. Cornwallis, Esq., M.P., of Linton Park, Maidstone, Kent.

History.—The foal since birth had periodically appeared dull and heavy, with occasional spasms and constipation. It was more or less always ailing. When I first saw the patient she appeared very dull, showing all the symptoms of intestinal colic, and continually made attempts to defecate.

Diagnosis.—Intestinal obstruction.

From the date of the first visit (August 14th) till the date of her death (the 23rd) she only passed a few hard fæces coated over with thick white mucus.

On post-mortem examination all the abdominal viscera were found to be healthy, except that part between the floating colon and the beginning of the rectum where there was suspended what looked to be a tumour.

Upon closer examination this appeared to resemble a spleen both in external appearance and on section. In its interior there was a cavity communicating with the lumen of the gut, all food having to pass through it, as the diameter of the gut proper was entirely obliterated.

The entrance to this cavity from the colon was just sufficiently large to admit the little finger, and the exit was perceptibly smaller. The cavity was about the size of half a lemon and contained a small quantity of gravel and ingesta.

Professor McFadyean very kindly examined the specimen and informed me that it was certainly a spleen.

It measured one foot long, four inches across, and one and a quarter inches in thickness at its thickest part. It was larger than the normal spleen which was attached in its usual place on the stomach.

"THE NATIONAL VETERINARY ASSOCIATION ON TUBERCULOSIS"—A PERSONAL EXPLANATION!!

It seems that the very general impression existing among the members of the N.V.A. at the Plymouth meeting that Professor McFadyean had "minimised the importance of tuberculosis to agriculturists and to consumers of meat" is entirely erroneous. That such an impression existed at Plymouth is certain, and it is satisfactory to find that the Professor is indignant at the mistake. Our regret is that he should have favoured any doubt as to his position by his ambiguous speech.

Under the title we quote above, an article appears in Professor M'Fadyean's own journal. It is termed an explanation, but it would be better described as an uncourteous retort. He accuses Professor Williams and Mr. Fraser of using "insulting expressions." He charges the latter gentleman with a "lapse from good manners," proclaims that he "shares the feeling of absolute disinterest with which he fears the public regard Mr. Fraser's views on professional subjects" and protests against the "misquotations and misconstructions" of what he said on the occasion.

I do not propose to offer any defence for Messrs. Williams and Fraser. They are quite able to defend themselves if they consider it necessary. I may

however say in passing that I think Professor M'Fadyean has read into the remarks of both men a meaning neither of them intended.

The curious thing in this vituperative "explanation" is a sentence which should be borne in mind by everyone—"Accusations of *mala fides* against those who do not happen to share our opinions cannot possibly advance our knowledge regarding disputable matters, and they inevitably tend to lower the tone of debate." The absolute truth of this statement is not lessened by the fact that it applies to explanations as well as debates. The difficulty is to agree what is *mala fides*; it is not sufficient to assume your opponent guilty and to hold him up to scorn.

My present intention is not to defend other speakers at Plymouth but to protect myself from this very aggressive "explanation." Before doing so I may just take objection to a statement made by the Professor in reference to the resolution carried by the meeting—without a contradicting voice—on the second day. Professor M'Fadyean refers to this as an "entirely irregular debate which was allowed to take place." As a fact there was no debate. Mr. Frazer was the only person who referred to the subject when a formal resolution, to test the feeling of the Association, was put and carried.

Thank goodness I am not accused of *mala fides*—only of "other offences against which a protest is necessary." The accusation is as follows—"As another example, let us take the following from Mr. Hunting's contribution to the debate:—"Professor M'Fadyean did not tell us, but he rather seemed to imply, that it was a harmless or mild disease which prevailed a little among cattle and a little among men, but it was not a bad sort of plague, and if it did kill a few people it did not kill many animals." This extract from an unpremeditated speech the Professor criticises thus—"A grosser perversion of anything that I have ever said on the subject of tuberculosis than this it would be difficult to imagine." If he had said "a gross caricature" I should not have objected, but "gross perversion" implies according to the dictionary, diverting from the truth. This is an accusation—like *mala fides*—which "inevitably tends to lower the tone of debate." I therefore offer the following quotations from Professor M'Fadyean's Plymouth speech which led me, I think not unfairly, to believe that he had minimised the importance of tuberculosis.

"I should like to devote a minute or two to examine the circumstances from which tuberculosis of cattle derives whatever importance it possesses. In the first place, tuberculosis of cattle has an undoubted economical importance. It is a disease that affects the health of our cattle; kills some of them, and deteriorates the value of others.

"I am inclined to think, however, that the economical importance of tuberculosis at the present time is sometimes over estimated, distinctly exaggerated."

"The losses of farmers—the actual money losses of farmers—from tuberculosis are seldom serious, except when there has been some gross neglect of such simple precautions in the way of prevention, as the removal of animals that are obviously ill and dying from the disease."

"In fact it is my opinion that a stock-owner may have tuberculosis among his cattle for many years and sustain no loss at all.

"I think it is exceedingly doubtful whether any cases of pulmonary consumption in man, which is the rampant form of tuberculosis in the human subject, ever originated from bovine tuberculosis, and I think the evidence also justifies the opinion that at the most only a small portion of the other forms of tuberculosis in man come from either meat or milk."

". . . . it is contended that tuberculous milk is one of the main causes of tabes mesenterica, particularly in children, and that during the last fifty years there has been little or no decline in the prevalence of that form of the disease . . . ."

". . . . . I still should be inclined to say that the statistics do not establish a close connection between tuberculous milk and tabes mesenterica . . . ."

"I think nobody who has examined the evidence can doubt that products derived from tuberculous animals must occasionally be the cause of the disease of the same name in human beings."

On reading over these remarkable statements I wonder what language I could have used to more fitly express the effect they had upon my mind at Plymouth. I am convinced that each paragraph would be more in accordance with every-day experience if it had its adverbs and adjectives altered. If I believed that these extracts presented a fair case against bovine tuberculesis I should never again trouble to agitate for its control. I hold a very different opinion, and I do not think either veterinary or public interests are assisted by minimising dangers well known to experts but insufficiently recognised by the public.

WILLIAM HUNTING.

PROFESSIONAL CONDUCT.

As one who has endeavoured to study "veterinary professional etiquette" I have read with surprise and interest Mr. Blakeway's letter in your issue of Oct. 14th.

As the question he requires answered is peculiar, inasmuch as it can be answered by a negative, or affirmative, the former to his advantage the latter to the advantage of the offenders. Allow me to repeat it and afterwards comment upon it.

"A short time ago a veterinary surgeon, who lives in this neighbourhood, and has a son lately qualified, was driving in company with his son when they met a client of mine who has some large brick works. The vet. stopped this gentleman and introduced his son, then asked if they could send in a tender for the veterinary attendance of his horses. Is this a kind of thing to report to the Registration Committee?"

I answer to this letter, Yes, the subject can be reported, but I cannot help asking where in this case there is any breach of professional conduct?

The brickyard owner may at present be Mr. Blakeway's client, but it is evident that he is also upon a friendly footing with the offending veterinary surgeon, or else an introduction to the son would not have been given. The gentleman in question will, in all probability, employ the man he considers to be the best to attend his horses.

Every man has a right to do his best to earn his living, every man has a right to press his own business when the chance presents itself. But in most cases "The weakest go to the wall."

Let me give an example. An old veterinary practitioner having been established in a place for twenty years with no opposition, finds that a young man suddenly starts against him, a man up to all the latest treatment of disease etc. What happens? The young man would naturally put up his brass plate, obtain introductions to, and call on all the best people round and ask them to employ him as their veterinary surgeon. If this is not considered professional conduct, then the very fact of the young man starting in the neighbourhood is not, as he starts with the knowledge that all the people in the district employ the old practitioner and are his clients. It then simply comes to this, that either the old practitioner retains his practice as before and the young man departs in disgust, or that the young man through his own hard work and cleverness gradually gets a good practice with consequent loss to the former practitioner. The deduction from this example is that a good practitioner need have no fear of any amount of opposition; his clients will keep to him, but if a better man comes on the scene his practice gradually diminishes. I am, as many who read this article will know, only a young practitioner, and attend cases out of pure interest in the veterinary work, but not at a low fee. I can cite several instances where old established and other practitioners from several miles distant have asked my clients to employ them, and offered perhaps a lower fee as an inducement. In one case even one of my opposition gentlemen spoke or was reported to speak unfavourably of me to one of my clients. The amusing part being that he, the opposition veterinary surgeon, did not even know me by sight. But to report any man would be waste of time to me. I say let them come and try to get my clients if they wish to, and I should then only consider that they were striving for their living—as we all have to do. As yet I have lost no work this way, in fact my practice has so increased that I have been obliged to take a partner to help me. If I pass a farm or large stables where I wish to obtain, or try to obtain the work, I just drive in, interview the owner, and ask if I can do his veterinary work for him, if he says no, Mr. So-and-So does it and gives me every satisfaction, I pass on and think no more about it, but if he says yes, so much the better for me. I cannot be expected to find out on the 15 miles circuit that I take what veterinary surgeon attends at the places I call at; it rests with the owner to choose his man.

Mr. Blakeway does not seem to see that clients are gifted with brains and are capable of keeping to the professional man they like best. As we live in a free country I take it that every man has a right to employ any vet. he likes, and every vet. has a right to get known to anyone he wishes, and ask for work in a straightforward way.

Whilst on this subject, is Mr. Blakeway's advertisement in your issue within the range of the bye-law against advertising professional abilities? Perhaps it is, but I should not like to put a paid advertisement into a paper and yet ask a question such as Mr. Blakeway does in your last issue.

Again, I repeat, the subject can be reported at once if Mr. Blakeway wishes to bestow a high compliment upon the veterinary surgeons in question, but most probably it would put into their hands a better means of getting work from his clients. For naturally when they had signed an undertaking not to speak to Mr. Blakeway's clients concerning their professional abilities, they would ask the next brickyard owner they met if he were Mr. Blakeway's client, upon being answered in the affirmative they could say, well Mr. So-and-So we cannot speak to you on business, we are bound not to. The client would naturally ask why, and the reply most probably would be, "My dear sir, your vet. is afraid that we shall get all his clients' work so we have signed a paper not to ask for it—thus giving the men reported 'best man.'" The wisest thing to do is to let the client make his choice, and take no notice how many opposition veterinary surgeons interview him. Therefore I answer *No*, do not report it, let the old adage prove itself, "The weakest go to the wall."

H. K. Tasker.

"THE STABLE AND KENNEL."

The following is the circular issued to veterinary surgeons by our contemporary:—

Dear Sir,

"The Stable and Kennel," of which we send you herewith a specimen copy, although perhaps it is known to you, especially desires to number among its friends leading members of your esteemed profession. Wherever possible we prefer them as resident correspondents of our journal. Will you so act for us in an honorary capacity, sending us from time to time such local items relating to horses, dogs, and their owners, as may seem to you worthy of mention?

Any article of general interest you may care to submit we shall always be happy to consider, and if accepted, to pay for at our usual rates.

We shall have much pleasure in including your name in our Register of Veterinary Surgeons, so that readers of "The Stable and Kennel" in your neighbourhood will be advised to apply to you in case of need of professional services. This involves no charge on our part either to you or to them.

If these propositions are agreeable to you, please fill in the enclosed form and return to—Yours faithfully,

Montague Marks, Editor.

P.S.—An early reply will oblige, as we are now filling up the blanks in our Register.

On an enclosed postcard is:—

To the Editor of

"The Stable and Kennel,"

161 Strand, London, W.C.

Sir,

I accept your proposal to add my name to your Register of Veterinary Surgeons, to whom your readers in my neighbourhood may apply (on payment of the usual fee) when requiring professional services. It is understood that this involves no expense or obligation on my part.

I shall also be glad to send you occasional notes for publication, as you request.

Name .....

Residence .....

Date .....

SOME LITERARY RESULTS.

13 Albion Street,
Cheltenham.
October 17th, 1899.

Dear Sir,

Like other unfortunate members of our calling I have been greatly disappointed with the new periodical, *The Stable and Kennel*, which started so well. Last month an article appeared on the "Management of the Horse's Foot," by Jas. Cooke, F.R.C.V.S. (President of the Yorkshire Veterinary Medical Society) with a very excellent portrait of the writer at its commencement. A strange familiarity seemed to possess some of the paragraphs as I read those of September 30th, but on reading the continuation in the following week's issue I was convinced that I had seen much of it before. I therefore turned back to *The Veterinary Record* (which I have had bound since its beginning) of December 2nd, 1893, in which appeared a short essay on the same subject, and the similarity of ideas was at once accounted for.

My assistant has been good enough to make a few extracts from the two articles and place them side by side.

It may be an accidental coincidence, if otherwise I do not complain of the "cribbing," but had Mr. Cooke done me the honour to ask for my assistance in his labours, I would have thought it more straightforward.—Yours very truly,

THOMAS A. HUBAND.

The Veterinary Record, December 2nd, 1893.

Paddocks of sound old turf on a dry porous subsoil, well shaded, and yet well watered, with careful housing in roomy loose boxes, on comfortable dry straw beds; surroundings are provided under which nature seldom fails to supply this valuable stock with such feet as in all probability will never, unless afterwards abused, give the animals or their owners any cause of trouble.

I find that with many small breeders the last consideration very frequently is the condition and care of the feet of their young horses. Many times I have seen promising two or three-year-old with ragged split feet and growing into all shapes but the right, when the most simple early attention would have averted disease or deformity.

Instances are easily forthcoming as to the influences of surrounding conditions upon foot development: place two foals at birth under quite opposite conditions, each having good feet, the one upon wet meadows where its feet are seldom or never on firm ground, the other upon dry uplands. From the meadows you have flat, soft, weak-soled feet, while upon the uplands they have grown a good shape, tough, and durable in texture.

When the first shoe was forged and by whom is, I believe, unknown, and whether Homer who wrote sometime about a thousand years before the Christian Era about "the brazen-footed steeds" meant that the horses had hoofs like brass or that they were shod with brass is uncertain.

The Stable and Kennel, October 7th, 1899.

Paddocks of sound old turf or dry porous subsoil, well shaded and yet well watered. With careful housing in roomy loose-boxes, on comfortable dry straw beds; surroundings are provided under which nature seldom fails to supply this valuable stock with such feet as in all probability will never, unless afterwards abused, give the animals or their owners any cause of trouble.

I find with many small breeders, the last consideration very frequently is the condition and care of the feet of their young horses. Many times I have seen promising two and three-year-olds with ragged split feet, and growing into all shapes but the right, when the most simple early attention would have prevented disease or deformity.

Instances are easily forthcoming as to the influence of surrounding conditions upon foot development; place two foals at birth, under quite opposite conditions, each having good feet, the one on wet meadows, where its feet are seldom or never on firm ground, the other upon dry uplands. From the meadows you have soft, flat, weak-soled feet, while upon the uplands they have grown a good shape, tough, and durable in texure.

When the first horse-shoe was made is, I believe, unknown, and whether Homer—who wrote one thousand years before the Christian Era, about "the brazen-footed" steeds—meant that the horses had hoofs like brass, or that they were shod with brass is uncertain.

[And much more in which the similarity is equally marked.]

VETERINARY SOCIETIES.

ROYAL VETERINARY COLLEGE VETERINARY MEDICAL ASSOCIATION

The 17th annual meeting of the Association was held in the New Theatre on Friday, October 13th, 1899, at 8 p.m. Professor Hobday in the chair. There were present Messrs. McIlvenna, Rix, Wooldridge, Chalmers, and Quinlan, all M.R.C.V.S., 39 members and two visitors.

After the minutes of the last meeting had been confirmed, the annual report of the Hon. Secretary was read. It showed that the character of the essays and discussions was above the average of previous years, and that the Association had passed through a very satisfactory session. In all seventeen essays were read, defended and discussed.

The results of the competitions for the prizes offered by the Association were: Class A. (silver medal) Mr. G. P. Male; class B. (silver medal) Mr. F. W. Roberts; class C. (silver medal) Mr. C. E. Steel.

Class II., for the best written examination—(silver medal) Mr. C. E. Rix.

For the best practical examination—(silver medal) Mr. J. McIlvenna; bronze medal, Mr. C. Roberts.

For the two best essays read and defended before the Association during the session 98-99—1st., silver medal, Mr. J. McIlvenna; 2nd, bronze medal, Mr. G. H. Wooldridge; equal 3rd, bronze medals, Messrs. C. E. Rix and C. H. Rait.

A special prize of £1 1s., kindly given by Mr B. P. Godfray, M.R.C.V.S., Jersey, for the best essay on "Some Diseases of the Dog," was won by Mr. G. H. Wooldridge.

The following were the office-bearers elected for the ensuing session:—*President*, Prof. Hobday; *Hon. Treas.*, Prof. Shave; *Hon. Sec*, Mr. C. E. Rix; *Assist. Sec.*, Mr. John Hobday; *Vice-Presidents*, Messrs. Collings, Jethiji, Wadley, Cooper, Thackeray, Tyler, Whitemore, Aldred, Siddall, Boyd, Allen, and Gibbs.

A hearty vote of thanks was unanimously accorded to Mr. B. P. Godfray, M.R.C.V.S., for the great interest he had taken in the Association

Mr. WOOLDRIDGE, M.R.C.V.S., exhibited an interesting morbid specimen, consisting of a keraphylocele of the horse's foot. A vote of thanks to the Chairman terminated the proceedings.

JOHN HOBDAY, *Assist. Sec.*

NATIONAL VETERINARY ASSOCIATION.

MILK FEVER IN COWS.

By F. T. HARVEY, F.R.C.V.S., St Columb

Abstract of paper read before the meeting at Plymouth.

(*Continued from page 221.*)

MEDICINAL TREATMENT.

It will be evident that the two principal indications must be met in any rational system of treatment for milk fever, one having for its object the controlling and modifying of the effects on the system, and elimination therefrom, of any toxin that may have gained access to the blood stream; the other to prevent the further entrance thereto of any remaining poisonous material existing in the mammary gland and its further elaboration therein.

First Indication.—In our own experience we confess the first indication mentioned is the one which we alone have had recourse to up to a very recent period. The results which we have obtained in this way will be found given at length in the Appendix to this paper. Great attention is paid to the calming of the cow by the use of sedatives during periods of spasm and delirium, and thus equalising the state of the vessels throughout the body as far as possible. For we believe that in milk fever some vascular areas are in a state of spasm, while others are not so, and that these areas are frequently changing. Lauder Brunton says: "That dilation of arterioles with a fall in blood pressure may be associated with spasmodic contraction not only of the vessels of the face but of those supplying the brain itself." It is often from the periods of spasm that complications date their origin. In addition to calming the system and moderating the nervous discharges, the vital forces must be sustained when necessary by the administration of stimulants. Indeed I believe in most cases it will be found necessary at some time or other to use both stimulants and sedatives, either separately or combined, for probably both are equally useful in equalising the state of the vessels throughout the body in special cases. Frequently one should have precedence over the other at the commencement of treatment, the choice depending largely on the stage of the disease and the type of case. In the so-called quiet cases stimulants would appear to be indicated.

Agents Used.– Chloral hydrate. The most frequently used of all agents in milk fever. Mr. McConnell advises its use in ounce doses at first, and then in half ounce doses every two hours until improvement is manifested. Some cows require a larger dose at the start. Its effects must be carefully watched. If the cow becomes quiet and the pulse keeps regular, the result is usually good, but if the pulse becomes feeble the chloral should be withheld and stimulants given.

I formerly considered that chloral relieved milk fever by its physiological action alone, in moderating spasm, but it is quite possible that it may have an antidotal action also on the toxin of the disease, and thus act as a direct curative, its action being dual. Chloral would appear to be contra indicated whenever the blood is insufficiently oxygenated. Two effects of chloral on the system are very important in relieving milk fever, viz.: if a sleepy condition is induced the vessels of the brain contract, and the organ becomes anæmic, while impressions on the spinal cord, which are usually of a painful character, are not felt. (Brunton). It is difficult to explain the bad results which some practitioners get from the use of chloral in milk fever.

Bromide of Potassium.—Very useful in moderate doses, when great excitement exists and in conjunction with chloral hydrate.

Sulpuric Ether.—A most useful stimulant and soother. I frequently introduce it directly into the rumen. Mr. Smythe, of Falmouth, generally gives it with the chloral, and with the best results. Mr. T. Campbell injects one and a half ounces directly into the muscles of the hip if cases are comatose when he first sees them.

Oil of Turpentine.—Very useful, especially in tympany, and given direct into the rumen. Highly spoken of by Professor Simonds.

Alcohol.—Much used. Said to sometimes cut short an attack, if not given in poisonous doses. Highly spoken of in this respect by McConnell. We sometimes place a pint of whisky into the rumen in later stages of severe cases.

Ammonia,—Very useful, particularly when the cow is bordering on a state of collapse. One ounce of carbonate introduced into the rumen having a good effect. Should not be given in bolus. Many practitioners speak highly of the use of ammonia in milk fever. It is very valuable when tympany is recurring. We rarely give it by the mouth.

Caffeine Salicylate.—Used hypodermically when the heart is showing signs of failure, it is highly spoken of by Schmidt. We have not used it. The dose is four to five grammes.

Strychnia.—Used by some in conjunction with ammonia and alcohol and highly spoken of. We often prescribe it when recovery is slow.

The above agents are assisted in their object by giving emollient laxatives, such as a few pounds of treacle, or a dose of oil, but never drastic purgatives. Schmidt gives aloes in such cases, but from the number of times the cows seem to have lost the dose it would not appear to have been very essential to recovery.

Second Indication. The preventing of the further elaboration of toxin in the udder, and neutralising that which is already there, may be accomplished by injecting directly into the gland or its sinuses solution of iodide of potassium or other substance. This treatment was first practised by J. Schmidt (Kolding) in March, 1896, and has since that time been extensively practised on the Continent, and with reputedly good results. If we admit milk fever to be due to a toxin then the latter is best dealt with, if possible, at the point of its origin, accordingly Schmidt's practice is fixed on a rational basis. The principle has been adopted in many other diseases both in human and veterinary practice. Lauder Brunton has discussed fully the question of using the poison route also as a route for the introduction of agents to destroy it.

Speaking of the use of iodine injections in septicæmic puerperal fever Dr. Barnes says: The poison is thus chased through the system, and, I believe, neutralised. That iodine so injected permeates the entire organism I have often proved. Certainly the entry is not made by the veins or lymphatics alone. There is one undeniable proof that iodine permeates every part of the uterus, in the disappearances of neoplastic tissues under repeated injections." Do not similar conclusions apply to the udder of cows, the absorptive capacity of which we have abundant evidence of? We therefore believe that the practice introduced by Schmidt is worthy of our fullest consideration, though I do not anticipate that we shall obtain results nearly as favourable as are said to have been already met with by our Continental brethren. It is probable that boiled water alone will answer one purpose, that is of washing out the sinuses of the udder in the same way as we may wash out the uterus with pure water in sapræmia. Chinosol, 15 grains to a pint of water, was used in two cases of milk fever by Hunter (*Record*, January, 1899), with good effect. Five

ounces of the solution being injected into each quarter. Schmidt used lysol solution in one case, but found it to render the milk lumpy. He thinks air is of use in assisting to break up the compounds formed in the udder, and certainly oxygen has a very important action in such a case. In all my cases air has got in with the injections. It certainly produces no harm. Iodide of potassium is the agent usually employed in these injections, and from 7 to 10 grammes is usually used in a litre of freshly boiled water. One injection only has been given in the great majority of cases in this country, and very rarely more than two. I think, however, a more rational practice would be the following up of the first injection with smaller ones at shorter intervals. As much as 20 or 24 grammes of iodide have been injected in one day according to Schmidt, and without injury. Nasal discharge and diarrhœa have, however, been noted in this country from much smaller doses than the above. These effects soon pass off. It cannot, I think, be too strongly urged that because we treat cases of milk fever with local injections, that we must expect that we can throw over all, or most of those measures which have hitherto been found of value. It can only be regarded as one of the ways of treating milk fever, and we ourselves have not as yet sufficient confidence in the system to depose at once our previous practice, for we have not as yet seen those remarkable results which some are said to have obtained so promptly. I believe the course of the attack is somewhat shorter, and the chance of recovery greater when injections are used. In five cases we have had four recoveries and one death, and in this latter case an old solution of iodide was used. (See case 10 in Appendix.) I don't think, however, it can yet be said, in justice to Schmidt, that his recommendations have been carried out in many cases in this country in accuracy and detail.

It does not appear to us to be quite rational to treat a severe case of milk fever by local injection alone. In a mild case, and early in the attack, this mode of treatment might be sufficient, since in such cases the amount of toxin in the system is small or the general reaction of the tissues is not severe. But when we find severe poisoning to exist we should certainly deal with the case in a general way and combat any symptoms pointing to danger, and not confine ourselves to local measures. It would be as reasonable to ignore the general effects in any ordinary case of poisoning and simply content ourselves with getting rid of unabsorbed poison.

How do the injections act? It seems generally agreed that the injections, of iodide at any rate, diminish the secretion of milk for some days, but the disease cannot be cured in this way, though Schmidt believes that this is its principal action. He believes that the loosening and shedding of the colustrum corpuscles is thereby diminished. He also believes it neutralises the toxin. But while Schmidt is anxious to keep the colostrum corpuscles quiet by injecting iodide he disturbs them by frequent massage of the udder. The following sentence of Schmidt's does not agree with the ideas he has above expressed—"As the unfreed cells continue to retain their place, the poisonous material is more rapidly absorbed into the blood stream than would be the case during secretion of milk." Schmidt does not seem at all clear as to what is actually taking place in the udder in milk fever, but this is due to his considering the colostrum itself as responsible for the formation of the toxin, whereas we consider the new cells, or those recently born, and upon which will fall the duties of lactation, to produce the toxin through some error in their nutrition. If Schmidt's views were correct, so far from not milking cows after calving we should do everything in our power to get rid of the colostrum by milking or otherwise, as when the colostrum was once got rid of the danger would be over. Schmidt, however, admits that it is possible for a poison producing process to take place in the udder apart from the shedding of real colustrum cells, or otherwise milk fever cases could not occur after the colostrum period. Any changes taking place in colostrum are of a passive and degenerative nature. Therefore it is highly probable that the poison of milk fever is the result of an active metabolism though it certainly must be regarded as an abnormal one.

Schmidt claims that the general symptoms rapidly alter for the better after the injection. He says the temperature rises almost at once, in some instances as much as 1°C. in the course of an hour. He also claims an early improvement on the surface temperature.

To sum up the effects of the injection of iodide of potassium into the udder in milk fever, it is probable :—

(1) That any toxin in the contained milk in the gland may be neutralised or rendered inert.

(2) That the iodide affects directly the working cells of the gland and the nerve endings, and thus preventing or moderating the further formation of toxin.

(3) That the iodide assists elimination, thereby favouring the disappearance of the toxin from the tissues. This is a general effect and might be obtained by giving the iodide in other ways. Mr. D. Pugh, *Veterinary Record*, August, 1898, states: When the iodide is injected into the udder it quickly acts on the kidneys, causing the urine to flow through the catheter (if retained *in situ*) in a little stream."

This eliminitive action may be of value, as we have already seen that whenever the urine is scanty recovery is slow and doubtful in milk fever.

(4) The iodide may neutralise toxin in the blood stream or tissues. With the exception of promoting elimination, however, it is possible that the general effects are slight. Schmidt gave two grammes hypodermically in milk fever, but did not notice any specific action on the part of the drug.

Ulterior Results of the Injection.

There is diminished secretion for a few days with perhaps in a few cases slight congestion of the udder. We must not, however, give the iodide the fault in all these cases. It is noticed sometimes when no injections are used.

We do not believe in severe mammitis occurring except when infection has taken place. It seems to follow some practitioners more than others.

Mammitis is certainly easily produced in milk fever, and, therefore, every care should be taken to guard against its occurrence. This includes thorough sterilisation of the infusion apparatus and the fluid infused as well as cleansing of the skin. It is curious to note the absence of mammitis with men taking not the least trouble in this respect.

DISCUSSION.

Mr. William Penhale (Barnstaple): Mr. President and Gentlemen,—I hope you will regard me in the light of a pressed man and not as a volunteer. I think the paper of my friend, Mr. Harvey, is enough to stagger anyone who has to do anything in the way of leading off a discussion. I can only offer to Mr. Harvey my word of praise for the very excellent and complete paper he has produced for us on this occasion. I think the paper in every respect is a very great credit to him, and as Western men we also take it as a credit to the Association to which he belongs.

Mr. Harvey has taken the subject under several heads, and in doing so, of course, there is necessarily some little reiteration in his paper. First of all he deals with the different breeds which are more or less susceptible to an attack of milk fever. The various breeds which are more susceptible to milk fever are those which yield heavy quantities of butter. I do not think that a very large milker is necessarily liable to an attack, but if a

cow yield an abnormally large quantity of butter she is a cow, especially after the third calving, more liable to go down than another. It is stated that about the fifth calving is the most probable time of a cow having an attack. Before I read that I was under the impression that every calf a cow had rendered her more susceptible, that is to say, the older she got the greater the danger of an attack of milk fever. Of course our very best butter breeds are the Channel Island cattle, the Jersey and Guernsey, and these undoubtedly are more susceptible than any others, and the disease is more fatal in them than in any other class of cows. Next to them—perhaps because of my being a North Devon man, but also from observations I have made—I should place North Devon cattle as being the most susceptible. It is well known that they stand out above all our native breeds here as the very best butter and cream producers, and they are most remarkably liable after the third calf to go down with an attack if they are kept on certain pasture. The next point is that of keep, and here the author says that the spring of the year is the time when the disease is most prevalent, because then more cows are calving. I also put it because then the first shoot of the grass is the very richest, and that the disease is connected with plethora there can be no doubt. Country practitioners very well know that in a dry, barren, or cold spring, when the grass is not very luxuriant or good, the disease will not be very rife. If, on the other hand, we get a warm May, with frequent showers, our hands will be full of cases of milk fever. I think this is a plain proof that the disease is connected with good feeding. Then again we also know that the disease is far more prevalent in quick pastures around towns where there is a certain amount of manuring going on. We know that a cow if starved out on a rough, sterile moor, where the grass is not very nutritious, will almost ward off an attack, but if the same cow is brought in the last few weeks before calving and put in a very rich pasture it will induce an attack

There is nothing to add to Mr. Harvey's remarks on symptoms. I have found that when an animal is in the early stages of attack, when it feels the disease coming on, there is a good deal of shifting of the feet—paddling of the front feet. I almost take this as a diagnostic sign that she is in for an attack of milk fever. There is a strong point in the paper that if a cow is suffering from any other disease, almost of any kind, that it is an opposing factor to an attack of milk fever. I am quite at one with that. But there is a paragraph where a certain gentleman observed,—I think it was Professor Walley—that in a very large number of the cases he had there was retention of the fœtal membrane. I think this must be taken as accidental, because according to my own observations the cow which is in the highest state of health, as Mr. Harvey puts it, is the most liable. It is not the cow with an attack of mammitis or a cow with a putrid fœtal membrane, or even the retention of the fœtal membrane which is liable to go down ; it is the cow which does remarkably well for the first few hours as a rule. I agree that we get cases before parturition, and I have always found such cases fatal. Sometimes they may go on for two or three weeks and then get a bad attack. Mr. Harvey enumerates what he calls "exciting causes." I only agree with one of his exciting causes as stated in that paragraph, and that is a heavy meal, especially a feed of roots. I think if an animal gets a heavy feed of roots—and even grass will do it sometimes—within a few hours after calving, if the cow is at all susceptible, it is very likely to bring on an attack of milk fever. Remembering the part of the paper which deals with a case of milk fever as a case of auto-intoxication, it is rather difficult to see why a meal of that kind should induce an attack. After an attack has set in, the author says that the animal should be carefully watched and strictly attended to, and that if possible there should be two attendants. I entirely agree with that. I do not think it is the business of any one man to nurse a cow through an attack of milk fever, but that two should be always present day and night. Mr. Harvey enumerates a few accidental occurrences which may cause an animal to go off suddenly, such as dislocation of the neck by an animal getting excited and throwing itself about. Suffocation may also occur in this way. I found a great many cows went off suddenly through regurgitation of the food in the œsophagus, and through the larynx, and so choking the animal in that way. I have had a very large number die suddenly through that cause. The spasmodic form of the disease is undoubtedly the most fatal, and until I adopted Schmidt's method of treatment I must say I found these cases very rarely indeed recover. If an animal goes down squat to begin with and lies pretty quiet, under the old system of stimulants we had an occasional recovery, but if there was a clenching of the jaws and severe spasms of the muscles of the body, I generally gave up the case as hopeless. A great deal has been said and a lot written on what the author terms "drenching pneumonia," but I am not so sure whether we have not been labouring somewhat under a mistake about that. The essay deals very largely with the conditions which cows are in when they have an attack of milk fever ; they are very liable indeed to local congestion. We find very often that we have sloughing of the quarters. The essayist points out very clearly that the vessels are liable to be broken down very easily even by introducing the hand up the rectum. No matter how careful one is, the hand is likely to come back smothered with blood. Seeing then the animal's condition in this case, is it not fair to suppose that the lungs also may be in this condition and that through local congestion, through the lungs getting gorged with blood in this way, a form of pneumonia is set up? I am sure country practitioners will follow me when I say that an attack of pneumonia found in parturient apoplexy is not like ordinary pneumonia. It sets in rather quietly to begin with. All we find is quickened breathing, not the grunt we get in ordinary pneumonia, so that it looks as if the lung became gorged with blood and was unable to relieve itself, and that by and by, through being gorged in that way, other changes take place. Such cases nearly always end fatally. In my experience it is very rare for a cow to recover from milk fever, however well she is getting on, if such an attack sets in. It always means death, although perhaps a rather slow death. I am rather sceptical about the medicine going down.

The essayist points out, and this takes us away to the true cause of the disease, or at least will point in the direction of it, that in an early attack of milk fever the udder itself is somewhat swollen, dense, and hard. I believe myself that is the prevailing symptom. Professor Simonds used to remark in his lecture on blistering that if a horse or any other animal was affected in its head it was no use blistering the tail. But we have been going on for a good many years treating the heads of our cattle for milk fever, when we should—there is no doubt about it—have been treating the udder. I think anybody who reads carefully this essay will feel convinced that the udder is the beginning of the mischief.

The essayist seems to point out that the young cells elaborate a poison rather than true products, just in the same way as when a man gets diabetes some parts of the viscera take on manufacturing sugar, and you cannot say the why and wherefore. The author says that the udder will at times manufacture a poison. If that is so, I cannot see why we might not have an attack in a young animal, and further I do not see why it should be confined to the butter breeds. We know that the colostrum cells are fat cells, therefore it appears to me that it is connected with the colostrum cells in some way or other. Then we know that an animal has to be in a thriving condition, when there would naturally be a

greater production of these cells. It is well known that if a cow is falling back in condition at the time she calves, it will oppose an attack or ward it off, no matter how fat she is. In my own case the injection of the udder with iodide of potassium is the best treatment we have so far adopted for the cure of the disease. Looking at the fatalities that I had before, I have found it very highly successful indeed. I think I have had something like 22 recoveries out of 35 cases. Some of those cases were quite hopeless, as we only came on the scene very late. As regards the chloral hydrate treatment, certainly it will quiet an animal in the spasmodic form of the disease, but beyond that I think it has but little curative effect. The splendid result some practitioners have obtained from it I believe is due to the change altogether we have adopted in the treatment. Twelve or fifteen years ago everyone of us when we came to a case first gave a dose of sulphate of magnesia. Many of us have gone to a case where there has been a slight attack, and we have given a dose, and before we left the place found our animal down in profound coma, showing that in some way or other sulphate of magnesia is a poison in in this complaint. I contend we want no purgative in a case of milk fever. The essayist says that almost the first reaction is that the bowels begin to act, and if an animal is going to recover you will have an attack of diarrhœa probably more or less severe. And especially is this the case since adopting Schmidt's system of injecting the udder. Is it that the oil is driven into the system and acts as a purgative? I will leave that to those who know better than myself about the cause and effect of this disease. The paper truly says that the chances of recovery are so much less if the cow goes down out of doors and she has to be hauled in. Until recently I have always regarded these cases as fatal.

There are a few little points I should like some assistance on. After the injection with iodide of potassium, how soon should we commence to milk the udder? For my own part I have usually left the cow quiet for about 12 hours and then milked her. When I found that milk was still secreting rather rapidly I have given a second injection, and I have also given a second injection if the cow looked very depressed or if she had not regained her legs. Then with regard to feeding a cow that is recovering, I found one had to be very careful indeed not to give solid food for a few days, or at least, very little indeed. But after the injection of iodide of potassium I do not think that there is at all the danger of giving them a fair amount of food, and I believe that there is less liabity to deaths from exhaustion if you begin to feed fairly early. When a cow will drink I always allow her to drink—not too much at a time. I follow it up by allowing her to drink pretty often. Then with regard to the results of injecting the udder, there is mammitis. The essayist seems to have the idea that this must be somehow due to some foreign contagion entering the gland through the injection itself or through the instruments. He says that he had found mammitis always follows some practitioners. I found mammitis rather troublesome in the cases I have injected, and some of the deaths have been due to acute mammitis, the udder being swollen up to an enormous extent, and we have had a severe form of mammitis. I would ask the writer to consider for a moment the condition of the cow. A cow in milk fever is remarkably liable to local congestions, and we see how, without very much apparent injury, the muscles of the thighs and the muscles of the quarters and the lungs themselves are liable to these congestions, sloughing and death. If that is the case, must not even the purest water, and pure iodide of potassium, and clean instruments be sufficient to set up inflammation in a gland which at that time is so remarkably active, where the nerve force is so great, and where it is supplied at that moment with a very unusual quantity of blood? I should like him to reconsider that part of it, and I think if practitioners are careful to observe they will find in a great many instances that there is, what he points out, a little congestion, and very often that congestion may lead to something severe.

As regards Schmidt's treatment I repeat again I am highly favourable to it. I think it is a spendid departure and an advance in cattle practice greater than any that has occurred in my time. The injection of iodide for the treatment of active mycosis will not succeed it. I think if it is persevered in, country practitioners will find they have a remedy which will almost meet their requirements. Of course there will be deaths. In treating any serious diseases, we do not always succeed in curing, but we are fairly successful with them, sufficiently so to warrant treatment. Therefore I say that the injection of this antidote into the udder which, as the essayist put it, chases the poison out of the system, is a very good one.

(To be continued).

SOUTHERN COUNTIES V.M.A.—A Correction.

Sir,

In replying to the discussion at the last meeting of the Association I stated that even Mr. Barrett, of Nuneaton, who is so well known as an expert in the "standing" operation, had to cast two or three colts a year.

In a letter received on the 16th, Mr. Barrett informs me that I have somewhat over-stated the proportion, and asks me to make the necessary correction as, out of over 1000 cases he has only had to cast one. Regarding the length of time the clams are allowed to remain on, Mr. Barrett states that he usually removes them after six or ten hours and sometimes even after four.—Yours faithfully,

F. Hobday.

EXTRACTS AND NOTES.

SWINE FEVER AND THE APPOINTMENT OF INSPECTORS.

"Agricola" writes to *The Live Stock Journal*:—

The address which has been just delivered by Professor Woodhead, before the Veterinary College in London, opens up such a very important question on the subject of swine fever regulations, that it certainly should not be allowed to pass without further comment from an agricultural standpoint. The Professor gives it as his opinion that the whole work of inspection under the Board of Agriculture should be carried out by qualified veterinary surgeons, and that the present inspectors are taken from a class of men who are in his opinion both incompetent and unreliable.

This is a very sweeping statement, and care must be taken in any criticism, that his own words, as reported, should be here quoted. The inspector (he is reported to have said) "who had been brought up as a soldier, or in some civil occupation not associated with scientific work, could have little knowledge of the principles of infection and disinfection." . . . . "More than this, what inducement had the ordinary inspector to get rid of swine fever? He had been taken from his previous occupation to stamp out a disease by the disappearance of which his present occupation would be gone." He

afterwards qualified this assertion somewhat by saying that this "might not weigh with the bulk of men, but there were always a few men, in whatever sphere of life one moved, with whom an inducement of such a kind had a certain amount of weight."

Now, in the first place, any unprejudiced person who has considered the question of the appointment of inspectors must wonder at many of the selections which have been made. Some of those who have been selected for this important office are ignorant of work of any sort, and are simply young men whose fathers are of either good social or political standing, and have claim on the Government party in power at the time, or are sons of officials and others connected with Government official life. Such men are "pitchforked" into these responsible positions without any knowledge whatever of agricultural business, which is so absolutely bound up with the duties they have to carry out. It is said that the duty of an inspector is strictly laid down, and it is only a routine system which can be performed by anyone who is capable of clerical work. But then comes the very important question of being able to deal in a practical manner with the class of men with whom he necessarily comes in contact when treating with dealers and owners of pigs. Circumstances constantly occur which to the purely official eye of the clerical inspector would carry no weight at all, and yet quite unknown might make all the difference as to the future friends or opponents to the interests of the Board of Agriculture." Swine fever is a very difficult and insidious disease to combat, and the conditions of pig-keeping are more intricate and harder to deal with in every way than those which affect cattle; and it is a question whether it will ever be entirely eradicated, but at all events it is held in check, and much has been done towards its total suppression.

Again, those who have not had a live stock education, and do not thoroughly realise the great difference and importance of pedigree pure-bred herds when compared with ordinary commercial stock, fail to appreciate the feelings of the owners of valuable breeding herds when threatened with slaughter. Although the rules are such that in nearly every case there can be no distinction made when the disease has to be grappled with, there are all sorts of ways to prevent friction which it lies in the power of an inspector to make the best of; and there are always "two ways of doing the same thing"—the right way and the wrong. The Professor mentions the compensation to owners for slaughtered pigs; this is no doubt open to the abuse he describes, and a strict watch is required by inspectors against any fraudulent practices. There is no doubt that "Compensation" is the word upon which the whole question as it affects the farmer and ratepayer turns.

At present veterinary science is called in, scientific opinion is given, and then the inspector, who should be the practical business man, is left to carry out the details, just in the same way as a nurse carries out the instructions of a physician. By the appointment of experienced men taken from the ranks of those chiefly interested in agriculture, it would no doubt add greater confidence to those they have to deal with, and they would by their special knowledge and tact save much of the present friction with the Board; and besides this it would, as I said before, do away with the great grievance which is now felt in agricultural circles because these offices are sometimes given to soldiers, sailors, and, in some instances, to untried men over the heads of those whose own and family interests are bound up in the welfare of agriculture and the suppression of disease in British Live stock."

SHEEP-WORRYING CASE AT BARNSTAPLE.

William W. Pile, farmer, at Barnstaple County Court, October 10th, claim £4 15s. from Dr. Fleming, C.B., Combemartin, for loss of a lamb and the worrying of others by defendant's dog.—Plaintiff stated that on June 16th he saw from his garden a dog worrying sheep of his. He was quite certain it was defendant's dog, a biscuit-coloured dog, the only one in the district. He called at Dr. Fleming's, told him his dog had been worrying sheep, and went up to the field. On June 10th Dr. Fleming had paid a sovereign for another lamb.—Edward Challacombe also deposed to seeing a light-coloured dog driving plaintiff's sheep on June 16th.—Richard Norman, who butchered the lamb, gave its value as £1 to 25s. It was nipped all over.—Mr. A. F. Seldon (for defendant) commented upon the fact that Pile only claimed 15s. on June 23rd. That being so, he contended that plaintiff was not entitled to very much credit.—Defendant stated that he paid on June 10th because there was a doubt about the matter. After this he took the greatest precautions. As a veterinary surgeon he had had experience of muzzles for forty years, and selected one from many. It was impossible for the dog (a chow-chow) to bite sheep when muzzled. From half-past nine to half-past two on June 16th the dog lay by his side in the garden while witness was reading and writing. When Pile later told him that his dog had been worrying sheep witness said it was nonsense.—Judge Beresford: Pile says he actually saw a dog worrying the sheep, and that it was yours.—Dr. Fleming: I don't believe it was possible for him to see the dog from where he says.—Replying to Mr. R. Hendy (for plaintiff) witness admitted having paid a Mr. Clogg for a sheep in May because he was away at the time.—Louisa Irwin, domestic, corroborated as to the dog not being away on June 16th.—His Honour should have preferred a jury to deal with such a difficult case. There was a mistake somewhere. The dog did not come into court with the best character, for he had worried a sheep before. He must give plaintiff the benefit of the doubt. As regards the suggestion that a muzzled dog could not bite sheep, his practical experience told him that it was not so. Verdict for plaintiff for 25s.

THE VETERINARY COLLEGES.

The Veterinary Colleges in Edinburgh were opened on Wednesday. There was a marked contrast between the inaugural addresses delivered at the opening of these Colleges. At the venerable "Dick's" College in Clyde Street, the opening address was delivered by Dr. Douglas, M.P., who regaled his audience with some pleasantries as to the heroism shown by students in seeking to enter the veterinary profession at a time when the horse was threatened with extermination by the motor car, and the cow was threatened with extermination by the use of margarine in place of butter. At the New Veterinary College, the inaugural address was delivered by the respected Principal. After referring to the increase in the length and cost of the qualifying course, and the heavy loss that had been thereby caused to the Veterinary Colleges through the reduction in the number of students, Principal Williams directed the attention of his audience to some recently elucidated facts of the first importance respecting the burning question of tuberculosis. But although there was a great contrast between the inaugural addresses delivered at the opening of these Colleges, there was a marked similarity in the other part of the proceedings at both functions. Since the qualifying course was lengthened

from a three years' to a four years' course, and the cost of going through the course was proportionately increased, the number of students entering the Colleges had been so greatly reduced that the Colleges are suffering very heavily. By the Irish Bill of last session the Government set aside a sum of £15,000 for the establishment of a Veterinary College in Ireland; and if that project be gone on with, and the Irish students which at present come to the Scottish Veterinary Colleges for their training be drawn into getting their training at that Irish College, the interests of the Scottish Colleges will be still more seriously affected than they have been by the lengthening of the qualifying course. The Edinburgh city accounts of last year showed that the Dick College was being carried on at a loss, and there is no reason to doubt that the rival College in Leith Walk would have a similar tale to tell if its accounts were published. Hence it was that at the opening of the Dick College last week Sir James Russell was pleading for endowments to keep that College from being starved. Hence it was also that, at the opening of the New Veterinary College, Treasurer Cranston, who knows thoroughly well as to the financial condition and prospects of the Dick College, put in a strong plea in favour of the amalgamation of the two Colleges. There can be no manner of doubt whatever that one strong, well-equipped, well-staffed, and prosperous College would be immeasurably better for the profession than two rival Colleges which were being starved. If Treasurer Cranston takes up with his wonted energy and ability this proposal for the amalgamation of the two Veterinary Colleges in Edinburgh, there is every reason to believe that this proposal would be speedily carried to a satisfactory and successful issue. — *The North British Agriculturist.*

ON STREPTOTHRIX INFECTIONS.

By Alexander G. R. Foulerton, F.R.C.S. Eng.
(Bacteriologist to the Middlesex Hospital.)

The "ray-fungus" described by Bollinger in 1877 as causing actinomycosis in cattle and by Israel a year later as the cause of a similar disease in man, together with some allied micro-organisms, is now generally classed in the genus streptothrix of the sub-division of achlorophyllous fungi which are known as hyphomycetes or mould fungi. Several writers have, however, classed the streptothrices amongst the schizomycetes or fission fungi, regarding the former as examples of pleomorphous bacteria. For this latter view an erroneous interpretation of observations is probably responsible. Round bodies (possibly of the nature of arthrospores) seen in the sporulating stage of the streptothrix mycelium have been taken for cocci; and short lengths of mycelium produced by artificial or accidental causes have been described as bacillary forms, as if they had been produced by a natural process of fission. Flügge's latest classification includes a new subdivision created especially for this genus, the achlorophyllous fungi being subdivided into (1) schizomycetes, or bacteria; (2) streptothrices; (3) blastomycetes, or yeast fungi; and (4) hyphomycetes, or mould fungi. But this new subdivision seems unnecessary, since the streptothrices appear to belong naturally to the last subdivision.

Various streptothrics have been described as pathogenic for man. Thus there are (1) streptothrix actinomycotica, the original "ray fungus" of Bollinger and Irsael; (2) streptothrix maduræ of Vincent, which possibly includes two varieties of species occurring in the lesions as "black" and "ochroid" grains respectively; (3) streptothrix asteroides of Eppinger, isolated from an abscess in the neck of a man who had died with a cerebro-spinal meningitis of undetermined causation; (4) streptothrix Foesteri of Cohn, found in concretions in the lacrymal canal of man; (5) streptothrix aurea of Dubois Saint-Sévrin, described as the cause of a conjunctivitis in man, and possibly identical with streptothrix aurantiaca isolated by Rossi-Doria from the air; (6) streptothrix odorifera of Rullman, isolated from some sputum and possibly corresponding with streptothrix Foesteri of Cohn, with streptothrix alba of Rossi-Doria, and with a similar streptothrix isolated by the writer from polluted water; (7) streptothrix pseudo-tuberculosa hominis of Flexner, a fungus as to the exact nature of which there is some doubt, as it was only observed in the tissues and no cultures were obtained. Another species, streptothrix farcinica of Nocard, was isolated from the lesions of *fascin du bœuf*, a disease which is described as occurring amongst cattle, especially in France and Guadeloupe. Various other streptothrices have been isolated from air and water by Gasperini, Sauvageau, and Radias, Rossi-Doria, and others. Some of these are pathogenic for lower animals when tested by experimental inoculation. In addition to these fungi, definitely classed as streptothrics, so-called "streptothrix" or "mycelial" forms have been described as occurring in pure cultures of the bacilli of diphtheria and tuberculosis. I have certainly observed well-marked branching forms of bacillus tuberculosis under certain conditions of culture, and Coppen Jones, Babes, and others have suggested that what is known as bacillus tuberculosis is not a true fission fungus but belongs to the streptothrices. Babes and Levaditi claim that they have observed definite "actinomycotic" masses of mycelium with "clubs" in nodules on the meninges of rabbits after intracranial inoculation with cultures of bacillus tuberculosis. At present I prefer to consider such occasional branching forms as due to some abnormality in the growth of the fission-fungus, rather than as evidence justifying the inclusion of the organism amongst the streptothrices. But I think that this particular point is one which requires very careful further investigation, especially in the case of bacillus tuberculosis.

With regard to the disease known as "actinomycosis" in cattle and man it had long been thought that the condition so recognised clinically may be caused by more than one species of streptothrix, the anatomical results of infections of which might well be very similar. Thus Gasperini had described three varieties of species causing actinomycosis in cattle. Wolf and Israel isolated from human actinomycosis a streptothrix fungus which differed from streptothrix actinomycotica in that the growth under anærobic conditions was very free, whilst in the presence of oxygen it was very scanty. Levy isolated from five cases in man a streptothrix which resembled that of Wolf and Israel in its free growth under anærobic conditions. Kruse recognises two species as causing actinomycosis: (1) streptothrix actinomyces of Rossi-Doria, an ærobic fungus; and (2) streptothrix Israeli, an anærobic fungus; and a number of other writers have described cases which clinically present the features of actinomycosis, but which are caused by parasites which differ sufficiently from streptothrix actinomycotica to entitle them to be regarded as separate species. The following case appears to be one of this sort and the streptothrix fungus isolated from it could not be identified with any of the species previously described.

The patient, a woman, aged 46 years, was admitted into the Middlesex Hospital under the care of Mr. Pearce Gould. She had suffered from a "winter cough" for about twelve years and then during the last two years the cough had been more or less continuous. Twelve months before her admission into the hospital an abscess had been opened surgically in the left axilla and there a sinus remained along which a probe could be passed upwards and inwards for about five inches. A month before admission a small, red, painful lump appeared over the left calvicle. This had increased in size

and on admission there was a large subcutaneous swelling extended for about two inches above the calvicle and for from two to three inches below it. The swelling presented a nodular surface; the skin covering it was of a deep red or purple colour marked here and there by small yellow pustules and by small punched-out ulcers in places where such pustules had broken. The breath-sounds were weak all over the chest and almost inaudible over the left lung. A few râles could be heard over the right lung. Expectoration was frequent and the sputum was rather thin and tinged occasionally with blood. In the sputum and in pus from the skin-lesion small yellow grains were found, which on microscopic examination proved to be the mycelial masses of a streptothrix fungus. Several specimens of sputum were examined for bacillus tuberculosis with a negative result.

The streptothrix fungus was obtained in pure culture on glycerin-agar from the pus of a freshly opened pustule. The rate of growth was very slow, a colony springing from a single "grain" attaining at the end of three months a diameter of about 0·3 centimetre. The growth had a distinct resemblance to that of bacillus tuberculosis, the colonies being a dirty white colour, with a heaped-up, dull, dry-looking surface. The substance of a colony after about eight weeks' growth was quite loose and almost friable; but the growth had penetrated some little distance below the surface of the medium. At this stage the growth consisted of masses of branching mycelium which was mostly in the sporulating stage and broke up very easily. In still older cultures practically all trace of mycelium had disappeared and was replaced by masses of small spherical bodies which were taken to be of the nature of spores. From the original tubes on glycerin-agar sub-cultures on other media were made, but on this second set of tubes growth was still more scanty. In the next series of sub-cultures but little evidence of growth of any sort was obtained. Growth on horse serum and ox serum was very small in amount and some peptonisation apparently occurred as the culture sank gradually into the serum. In peptone beef-broth growth occurred in small, discoid, whitish colonies not larger than a pin's head, the medium meanwhile remaining quite clear. All these cultures were obtained under ordinary ærobic conditions at a temperature of 37° C. Tubes of glycerin-agar incubated under anærobic conditions showed no evidence of definite growth. Two rabbits inoculated with sub-cultures in peptone beef-broth survived for two months and when killed showed no lesions which could be attributed to the inoculation.

Since this paper was written Hayo Bruns, of Strasburg, has published an account of a somewhat similar streptothrix. Bruns notes that a fungus also similar to the one which he describes had been recorded by Berestnew as occurring in what the latter terms a case of "pseudo-actinomycosis." Bruns very rightly objects to the use of this term and considers that the streptothrix in question belongs to a new species.—*Lancet.*

Personal.

Mr. P. Maxwell Edgar, M.R.C.V.S., formerly Government Veterinary Surgeon to the Cape of Good Hope, has been appointed Veterinary Inspector to the Government of New Zealand. He sails on Nov. 9th.

Mr. Donald H Rait, M.R.C.V.S., has been appointed Veterinary Inspector to the Government of New Zealand, and will proceed there to take up his appointment.

ARMY VETERINARY DEPARTMENT.

Captain Drage, Royal Horse Guards, has been appointed the veterinary charge of the 13th Hussars on mobilization.

A lecture was announced to be given in the Army Veterinary School for Tuesday, 17th inst., by Major Moore, professor at the school, on the method of shipping horses and their treatment on board ship.

OBITUARY.

Veterinary Surgeon B. C. R. Gardiner formerly of the 3rd Hussars, died on the 30th ult., at 8 Larkstone Road, Ilfracombe, aged seventy five. He was appointed veterinary surgeon in May, 1846, promoted to the 1st class July, 1859, Staff Veterinary Surgeon in June, 1661, and retired on half pay, in July, 1879. He served with the 7th Dragoon Guards throughout the Kaffir War of 1846-47, receiving the medal.—*The Broad Arrow.*

CORRESPONDENCE

MEAT INSPECTION.

Sir,

I had not intended replying to the answers you gave to my questions in last week's *Record*, but it has been pointed out to me that unless I did so, it would appear that I was satisfied with them, which is far from being the case.

I am compelled to suppose they were seriously given as the subject is too serious for joking, and I must also admit your absolute right to your own opinion. Possibly your reasons may assist the Minister before whom the deputation of the Council will appear, in coming to a right conclusion.

Let me state the issue quite plainly. You contend that it is proper to include the subject of tuberculin and other tests in the examination of a Sanitary Inspector on the grounds—

1st.—That he will thereby be able to suggest to farmers and cowkeepers the value of the test to them.

2nd.—That by his knowledge of tuberculin he will be prevented from playing with it.

My contentions are:—

1st.—That the Sanitary Inspector is not the right person to instruct the farmer on veterinary matters.

2nd.—That it is no part of his business and of no value to him in his business, to have any knowledge of tuberculin.

3rd.—That he will be far less likely to play with it, if he knows nothing about it.

4th.—That when we ask the Government to grant us exclusive privileges with regard to tuberculin, our position will be much weakened if another body can claim that they also should be included in these privileges, on the ground that the subject is specifically included in their diploma.—Yours obediently, Wm. Woods.

RE CANKEROUS TOUTING.

Sir,

If the thesis of your correspondent contained as many gramatical errors and litterary faults as his letter in this week's *Record*, its rejection by the Fellowship examiners needs no explanation.—Your truly,

Oct. 14th. Member.

Communications, Books, and Papers received:—Messrs. A. W. Hill, J. Chalmers, W. M. Scott, T. A. Huband, John Hobday. W. Woods, M. Hedley, F. Hobday. Major F. Raymond. "Member."

Annual Report 1898-99 Civil Vety. Dept. Bengal; Report on Tuberculin (University of Aberdeen.)